SECTION 4
ENVIRONMENTAL CONSEQUENCES

4.0 INTRODUCTION

This section presents an assessment of the potential environmental impacts associated with the proposed project alternatives that are included in **Section 2 – Alternatives**. In addition, mitigation strategies are described to avoid and minimize the identified impacts, where appropriate.

Specifically, this section will evaluate two Build Alternatives for the proposed runway extension: Alternative 2 and Alternative 5. As discussed previously, there are several individual stand-alone projects that are independent of the runway extension. These projects include the following: construction of new East Apron and Hangar Facilities, construction of Conventional Hangars on the existing Southwest Apron, acquisition of property within the Runway 15-33 Runway Protection Zones, construction of a new Airport Service Road, and removal of obstructions to the existing 14 CFR Part 77 surfaces for both Runway 15-33 and Runway 4-22. These separate projects, referred to in **Section 2** as projects common to each Build Alternative, will be included with each discussion of the two runway extension alternatives.

Thus, potential environmental impacts were analyzed for the following alternatives:

NO BUILD ALTERNATIVE: With implementation of this alternative, the Airport would remain as-is and no changes would be made to the existing Airport facilities.

ALTERNATIVE 2: Alternative 2 would provide a 6,400-foot Runway 4-22 by extending the Runway 4 end 1,896 feet with an 800-foot displaced threshold and relocating the Runway 22 end 1,000 feet. The 6,400-foot operational length would be achieved through the use of declared distances. In addition, this alternative includes the proposed projects common to both Build Alternatives described above.

ALTERNATIVE 5: Alternative 5 would involve provide a 6,492-foot runway also through the use of declared distances. To achieve this, the Runway 4 end would be extended 1,896 feet with a displaced threshold of 800 feet and the Runway 22 end would be relocated 908 feet. In addition, this alternative will include the proposed projects common to both Build Alternatives described above.

4.0.1 RESOURCE CATEGORIES

In accordance with FAA Order 1050.1E, the following environmental resource categories were assessed:

- Noise
- Compatible Land Use
- Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks
- Secondary (Induced) Impacts
- Air Quality
- Department of Transportation Act: Section 4(f) *
- Coastal Resources
- Wild and Scenic Rivers *
- Floodplains
- Wetlands
- Fish, Wildlife, and Plants
- Natural Resources and Energy Supply *
- Light Emissions and Visual Impacts

- Historic, Architectural, Archaeological, and Cultural Resources *
- Farmlands*
- Water Quality
- Hazardous Materials, Pollution Prevention, and Solid Waste
- Construction Impacts

* These resource categories were determined not to be affected by the proposed projects at ESN. As such, no further impact analyses were conducted for these categories beyond the evaluations that follow:

- **DEPARTMENT OF TRANSPORTATION ACT: SECTION 4(f)**: The EA investigated the direct and indirect impacts of the proposed projects upon resources such as parks, recreation areas, wildlife refuges, and historic structures, which are protected under Section 4(f) of the DOT Act of 1966. No Section 4(f) resources would be impacted by the either of the Build Alternatives.

- **HISTORIC, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES**: The Maryland Historical Trust was consulted in order to document the presence of historic and archaeological resources within the proposed project area. Coordination with the Maryland Historical Trust indicates that there are no such resources that are located within the proposed project area (see **Appendix B**).

- **FARMLANDS:** The USDA-NRCS was contacted in accordance with FAA Order 1050.1E, which states that consultation with the USDA-NRCS must occur to determine of the FPPA applies to the land that the proposed projects would convert to non-agricultural land or if an exemption the FPPA exists. Although the majority of proposed projects are located on land that, by soil type, is designated as prime farmland an/or farmland of statewide importance, the development on Airport property within the industrial areas north, south, and east of the Airport and within residential areas to the southeast have been excluded from calculations determining the significance of impact as these areas are already in or committed to urban development. The only non-urbanized area with prime farmland soils and/or soils of statewide importance is located to the northwest of the Airport. This land (15.9 acres) contains trees that are considered penetrations to the Airport's airspace. Since the proposed actions would involve only the removal of trees that penetrate the Airport's airspace on these lands, the FPPA does not apply (see **Appendix B**).

- **WILD AND SCENIC RIVERS**: There are no listed or potentially-listed Federal or State, nor potentially eligible, Wild and Scenic Rivers in the vicinity of the Airport.

- **NATURAL RESOURCES AND ENERGY SUPPLY**: The construction, operation, and maintenance of the proposed projects for any of the Build Alternatives as well as the No Build Alternative would not exceed available or future (project year) natural resources or energy supply.

4.1 NOISE

This section presents the methodology, noise exposure contours, and impacts associated with the development of the proposed projects at ESN. The noise environment around ESN is presented for both the 2019 and 2024 No Build and Build Alternatives.

4.1.1 OVERVIEW OF IMPACT ASSESSMENT

Development of a runway extension at an airport generally increases the area around the airport exposed to a particular level of aircraft noise. Federal guidance concerning noise exposure with regard to land use compatibility indicates that a significant noise impact would occur if analysis shows that the proposed alternative will cause noise-sensitive areas to experience an increase in noise of DNL 1.5 dBA or more at or above DNL 65 dBA noise exposure from the No Build Alternative to the Build Alternative. In addition, if the analysis shows a DNL 1.5 dBA increase between the Build and the No Build Alternatives within DNL 65 dBA, further analysis should be conducted for noise-sensitive areas between DNL 60 and 65 dBA having a DNL 3.0 dBA increase due to the proposed alternatives.

4.1.2 METHODOLOGY

This section presents the data and methodologies used to develop the noise exposure contours and evaluates the impact potential for the 2019 and 2024 No Build and Build scenarios for ESN. The operations data described herein constitute the input for all of the future-year noise contours.

INM 7.0a was used to develop the noise exposure contours and comparison contours for all future-year scenarios. The INM computes the noise exposure around an airport as a grid of DNL values. The grid data is then used to develop the noise exposure contours.

The data categories, such as Airport Layout, Runway Use, Flight Tracks, and Flight Track Use, which were used to determine the future operational counts inserted into INM 7.0a are presented in **Appendix E**.

The following information will be disclosed for each modeling scenario that is analyzed.

- **DNL Contours**: DNL contours are a graphical representation of how the noise from ESN's aircraft operations is distributed over the surrounding area on an average day of a given year. Noise exposure contours of 65 dBA, 70 dBA, and 75 dBA were developed for each alternative and each study year.

- **Affected Population**: The FAA defines DNL 65 dBA as the threshold of noise compatibility with noise sensitive land uses. Thus, the DNL 65 dBA contour is important for impact assessments.

- **Selected Grid Point Locations**: 11 individual sites (e.g., schools, religious institutions, hospitals, parks, recreation areas) were selected for detailed noise exposure level analysis as these represent noise sensitive receptor as defined by FAR Part 150 land use guidelines (see **Table 4.1-1**).

Typical noise-sensitive land uses were identified and described previously in **Section 3.3**.

TABLE 4.1-1
SELECTED GRID POINT LOCATIONS

Site Number	Description
1	Hog Neck Golf Course
2	Community Center
3	North Easton Sports Complex
4	Presbyterian Church of Christ
5	Church of Nazarene
6	Tots Park
7	N. Washington Street and Chapel Road
8	Hazelwood Drive and Sycamore Avenue
9	Easton Church of God
10	Chesapeake Christian School
11	Sycamore Avenue and N. Washington Street

4.1.3 IMPACT POTENTIAL – YEAR 2019

The average daily activity levels and aircraft fleet mix for 2019 are presented by aircraft operational categories. The number of operations was predicted through the *FAA Aerospace Forecast Fiscal Years 2009-2025*. Fleet mix was projected based on 2008 existing operational data. Detailed information is shown in **Appendix E**.

4.1.3.1 No Build Alternative – Year 2019

Under the No Build Alternative, the Airport would remain in its existing condition. Therefore, the runway configuration and all assumptions made for runway and flight track utilization were not altered from the 2008 existing condition.

DNL Contours: DNL contours resulting from the 2019 No Build Alternative are depicted on **Exhibit 4.1-1**. Total land area within the DNL 65 dBA contour off-Airport property is approximately 6 acres (see **Table 4.1-2**). To the east of Runway 15 there are approximately 0.1 acres within the DNL 65 dBA contour off-Airport property. The Airport currently owns an avigation easement over this area and is zoned for commercial land use. Approximately 0.7 acres are off the Runway 4 end over a parcel zoned for commercial land use. The remaining 5.2 acres within the DNL 65 dBA contour off-Airport property is over

Old Centreville Road and US Route 50. Approximately 0.4 acres of the DNL 70 dBA contour are outside the Airport property line over Old Centreville Road.

TABLE 4.1-2
ACREAGE OFF-AIRPORT WITHIN DNL – NO BUILD - 2019

DNL	No Build 2019 (Acres)	Alt 2 2019 (Acres)	Alt 5 2019 (Acres)	No Build 2024 (Acres)	Alt 2 2024 (Acres)	Alt 5 2024 (Acres)
DNL 65 dBA	6.0	18.3	12.5	6.9	18.7	13.9
DNL 70 dBA	0.4	0.4	0.4	0.5	0.4	0.3
DNL 75 dBA	0.0	0.0	0.0	0.0	0.0	0.0

Source: URS Corporation, 2009

Affected Population: The FAR Part 150 land use compatibility guidelines indicate that residential land use is considered incompatible at or above DNL 65 dBA. Approximately 0.4 acres of the DNL 65 dBA contour are within residential areas but are undeveloped.

Selected Grid Point Locations: A Year 2019 No Build Alternative single-point DNL noise exposure analysis was conducted for 11 noise sensitive receptor locations around the Airport (see **Table 4.1-3**).

TABLE 4.1-3
DNL AT SELECTED SITES – NO BUILD - 2019

Selected Grid Point Locations	Existing 2008 (DNL)	No Build 2019 (DNL)	Alt 2 2019 (DNL)	Alt 5 2019 (DNL)	No Build 2024 (DNL)	Alt 2 2024 (DNL)	Alt 5 2024 (DNL)
1	50.8	51.0	47.1	47.1	51.2	47.2	47.2
2	52.9	53.2	50.5	50.6	53.3	50.7	50.7
3	47.0	47.3	46.5	46.5	47.4	46.6	46.6
4	47.5	47.8	47.8	47.8	47.9	47.9	47.9
5	55.0	55.3	55.7	55.6	55.5	55.8	55.7
6	53.9	54.2	54.4	54.4	54.3	54.5	54.5
7	47.6	47.9	47.4	47.5	48.0	47.5	47.6
8	47.2	47.5	47.4	47.5	47.6	47.5	47.6
9	48.7	49.0	47.9	48.0	49.1	48.0	48.1
10	49.5	49.8	49.0	49.1	49.9	49.2	49.3
11	47.2	47.5	47.4	47.5	47.6	47.5	47.6

Source: URS Corporation, 2009

4.1.3.2 Alternative 2 – Year 2019

Alternative 2 proposes a runway extension of 1,896 feet on the Runway 4 end with a 800-foot displaced threshold. The Runway 22 end would be relocated 1,000 feet resulting in a 6,400-foot runway. Runway 15-33 remains unchanged from the No Build Alternative.

DNL Contours: The DNL contours resulting from the 2019 Alternative 2 are depicted on **Exhibit 4.1-2**. Total land area within the DNL 65 dBA contour off-Airport property is approximately 18.3 acres (see **Table 4.1-4**). To the east of Runway 15 there are approximately 0.1 acres within the DNL 65 dBA contour off-Airport property over which the Airport currently owns an avigation easement; this parcel is zoned for commercial land use. The remaining approximate 18.2 acres are off the Runway 4 end over a parcel zoned for commercial land use; this parcel is proposed for land acquisition under this alternative to accommodate the Runway 4 extension. Approximately 0.4 acres of the DNL 70 dBA contour are outside the Airport property off the Runway 4 end which is proposed for land acquisition.

TABLE 4.1-4
ACREAGE OFF-AIRPORT WITHIN DNL – ALTERNATIVE 2 - 2019

DNL	No Build 2019 (Acres)	Alt 2 2019 (Acres)	Alt 5 2019 (Acres)	No Build 2024 (Acres)	Alt 2 2024 (Acres)	Alt 5 2024 (Acres)
DNL 65 dBA	6.0	18.3	12.5	6.9	18.7	13.9
DNL 70 dBA	0.4	0.4	0.4	0.5	0.4	0.3
DNL 75 dBA	0.0	0.0	0.0	0.0	0.0	0.0

Source: URS Corporation, 2009

Affected Population: The FAR Part 150 land use compatibility guidelines indicate that residential land use is considered incompatible at or above DNL 65 dBA. No residential areas are inside the DNL 65 dBA contour for this alternative.

Selected Grid Point Locations: A Year 2019 Alternative 2 single-point DNL noise exposure analysis was conducted for 11 noise sensitive receptor locations around the Airport (see **Table 4.1-5**).

TABLE 4.1-5
DNL AT SELECTED SITES – ALTERNATIVE 2 - 2019

Selected Grid Point Locations	Existing 2008 (DNL)	No Build 2019 (DNL)	Alt 2 2019 (DNL)	Alt 5 2019 (DNL)	No Build 2024 (DNL)	Alt 2 2024 (DNL)	Alt 5 2024 (DNL)
1	50.8	51.0	47.1	47.1	51.2	47.2	47.2
2	52.9	53.2	50.5	50.6	53.3	50.7	50.7
3	47.0	47.3	46.5	46.5	47.4	46.6	46.6
4	47.5	47.8	47.8	47.8	47.9	47.9	47.9
5	55.0	55.3	55.7	55.6	55.5	55.8	55.7
6	53.9	54.2	54.4	54.4	54.3	54.5	54.5
7	47.6	47.9	47.4	47.5	48.0	47.5	47.6
8	47.2	47.5	47.4	47.5	47.6	47.5	47.6
9	48.7	49.0	47.9	48.0	49.1	48.0	48.1
10	49.5	49.8	49.0	49.1	49.9	49.2	49.3
11	47.2	47.5	47.4	47.5	47.6	47.5	47.6

Source: URS Corporation, 2009

4.1.3.3 Alternative 5 – Year 2019

Alternative 5 involves a runway extension of 1,896 feet on the Runway 4 end with a 800-foot threshold displacement. The Runway 22 threshold is to be relocated 902 feet resulting in a 6,492-foot runway. Runway 15-33 remains unchanged from its existing condition.

DNL Contours: Noise exposure contours resulting from the Year 2019 Alternative 5 area depicted as DNL contours in **Exhibit 4.1-3**. Total land area within the DNL 65 dBA contour off of Airport property is approximately 12.5 acres (see **Table 4.1-6**). To the east of Runway 15 there are approximately 0.1 acres within the DNL 65 dBA contour off-Airport property. The Airport currently owns an avigation easement over this area and is zoned for commercial land use. Approximately 12.5 acres are off the Runway 4 end over a parcel zoned for commercial land use and is proposed for land acquisition under this alternative. Approximately 0.4 acres of the DNL 70 dBA contour are outside the Airport property line off the Runway 4 end which is proposed for land acquisition.

TABLE 4.1-6
ACREAGE OFF-AIRPORT WITHIN DNL – ALTERNATIVE 5 - 2019

DNL	No Build 2019 (Acres)	Alt 2 2019 (Acres)	Alt 5 2019 (Acres)	No Build 2024 (Acres)	Alt 2 2024 (Acres)	Alt 5 2024 (Acres)
DNL 65 dBA	6.0	18.3	12.5	6.9	18.7	13.9
DNL 70 dBA	0.4	0.4	0.4	0.5	0.4	0.3
DNL 75 dBA	0.0	0.0	0.0	0.0	0.0	0.0

Source: URS Corporation, 2009

Affected Population: The FAR Part 150 land use compatibility guidelines indicate that residential land use is considered incompatible at or above DNL 65 dBA. No residential areas are inside the DNL 65 dBA contour for this alternative.

Selected Grid Point Locations: A Year 2019 grid point DNL noise exposure analysis was conducted for Alternative 5 at 11 noise sensitive receptor locations around the Airport (see **Table 4.1-7**.)

TABLE 4.1-7
DNL AT SELECTED SITES – ALTERNATIVE 5 - 2019

Selected Grid Point Locations	Existing 2008 (DNL)	No Build 2019 (DNL)	Alt 2 2019 (DNL)	Alt 5 2019 (DNL)	No Build 2024 (DNL)	Alt 2 2024 (DNL)	Alt 5 2024 (DNL)
1	50.8	51.0	47.1	47.1	51.2	47.2	47.2
2	52.9	53.2	50.5	50.6	53.3	50.7	50.7
3	47.0	47.3	46.5	46.5	47.4	46.6	46.6
4	47.5	47.8	47.8	47.8	47.9	47.9	47.9
5	55.0	55.3	55.7	55.6	55.5	55.8	55.7
6	53.9	54.2	54.4	54.4	54.3	54.5	54.5
7	47.6	47.9	47.4	47.5	48.0	47.5	47.6
8	47.2	47.5	47.4	47.5	47.6	47.5	47.6
9	48.7	49.0	47.9	48.0	49.1	48.0	48.1
10	49.5	49.8	49.0	49.1	49.9	49.2	49.3
11	47.2	47.5	47.4	47.5	47.6	47.5	47.6

Source: URS Corporation, 2009

4.1.4 IMPACT POTENTIAL – YEAR 2024

The average daily activity levels and aircraft fleet mix for 2024 were developed by aircraft operational categories. The number of operations was predicted using the *FAA Aerospace Forecast Fiscal Years 2009-2025* which predicts a growth rate of 0.6% for typical General Aviation operations. Fleet mix was assumed based on 2008 existing operational data. The input data are presented in **Appendix E**.

4.1.4.1 No Build Alternative - Year 2024

Under the No Build Alternative, the Airport would remain in its existing condition. This means that the runway geometry and all assumptions made for runway and flight track utilization were not altered from the 2008 existing condition.

DNL Contours: DNL contours resulting from the 2024 No Build Alternative are depicted on **Exhibit 4.1-4**. Total land area within the DNL 65 dBA contour off-Airport property is approximately 6.9 acres (see **Table 4.1-8**). To the east of Runway 15 there are approximately 0.1 acres within the DNL 65 dBA contour off-Airport property. The Airport currently owns an avigation easement over this area and is zoned for commercial land use. Approximately 1.1 acres are off the Runway 4 end over a parcel zoned for commercial land use. This parcel is proposed for acquisition under the Build Alternative to accommodate the runway extension. The remaining 4.5 acres within the DNL 65 dBA contour off-Airport property is over Old Centreville Road and US Route 50. Approximately 0.5 acres of the DNL 70 dBA contour are outside the Airport property line over Old Centreville Road.

TABLE 4.1-8
ACREAGE OFF-AIRPORT WITHIN DNL – NO BUILD - 2019

DNL	No Build 2019 (Acres)	Alt 2 2019 (Acres)	Alt 5 2019 (Acres)	No Build 2024 (Acres)	Alt 2 2024 (Acres)	Alt 5 2024 (Acres)
DNL 65 dBA	6.0	18.3	12.5	6.9	18.7	13.9
DNL 70 dBA	0.4	0.4	0.4	0.5	0.4	0.3
DNL 75 dBA	0.0	0.0	0.0	0.0	0.0	0.0

Source: URS Corporation, 2009

Affected Population: The FAR Part 150 land use compatibility guidelines indicate that residential land use is considered incompatible at or above DNL 65 dBA. Approximately 0.4 acres of the DNL 65 dBA contour are within residential areas but are undeveloped.

Selected Grid Point Locations: Year 2024 No Build Alternative single-point DNL noise exposure analysis was conducted for 11 noise sensitive receptor locations around the Airport (see **Table 4.1-9**).

TABLE 4.1-9
DNL AT SELECTED SITES – NO BUILD - 2019

Selected Grid Point Locations	Existing 2008 (DNL)	No Build 2019 (DNL)	Alt 2 2019 (DNL)	Alt 5 2019 (DNL)	No Build 2024 (DNL)	Alt 2 2024 (DNL)	Alt 5 2024 (DNL)
1	50.8	51.0	47.1	47.1	51.2	47.2	47.2
2	52.9	53.2	50.5	50.6	53.3	50.7	50.7
3	47.0	47.3	46.5	46.5	47.4	46.6	46.6
4	47.5	47.8	47.8	47.8	47.9	47.9	47.9
5	55.0	55.3	55.7	55.6	55.5	55.8	55.7
6	53.9	54.2	54.4	54.4	54.3	54.5	54.5
7	47.6	47.9	47.4	47.5	48.0	47.5	47.6
8	47.2	47.5	47.4	47.5	47.6	47.5	47.6
9	48.7	49.0	47.9	48.0	49.1	48.0	48.1
10	49.5	49.8	49.0	49.1	49.9	49.2	49.3
11	47.2	47.5	47.4	47.5	47.6	47.5	47.6

Source: URS Corporation, 2009

4.1.4.2 Alternative 2 – Year 2024

Alternative 2 proposes a runway extension of 1,896 feet on the runway 4 end and an 800-foot displaced threshold. This runway would be 6,400 feet long. Runway 15-33 remains unchanged from the No Build Alternative.

DNL Contours: The DNL contours resulting from the 2024 Alternative 2 are depicted on **Exhibit 4.1-5**. Total land area within the DNL 65 dBA contour off-Airport property is approximately 18.7 acres (see **Table 4.1-10**). To the east of Runway 15 there are approximately 0.1 acres within the DNL 65 dBA contour off-Airport property. The Airport currently owns an avigation easement over this area and is zoned for commercial land use. Approximately 18.2 acres are off the Runway 4 end over a parcel zoned for commercial land use and is proposed for land acquisition for the Runway 4 extension. Approximately 0.4 acres of the DNL 70 dBA contour are outside the Airport property line off the Runway 4 end which is proposed for land acquisition.

TABLE 4.1-10
ACREAGE OFF-AIRPORT WITHIN DNL – ALTERNATIVE 2 - 2024

DNL	No Build 2019 (Acres)	Alt 2 2019 (Acres)	Alt 5 2019 (Acres)	No Build 2024 (Acres)	Alt 2 2024 (Acres)	Alt 5 2024 (Acres)
DNL 65 dBA	6.0	18.3	12.5	6.9	18.7	13.9
DNL 70 dBA	0.4	0.4	0.4	0.5	0.4	0.3
DNL 75 dBA	0.0	0.0	0.0	0.0	0.0	0.0

Source: URS Corporation, 2009

Affected Population: The FAR Part 150 land use compatibility guidelines indicate that residential land use is considered incompatible at or above DNL 65 dBA. No residential areas are inside the DNL 65 dBA contour for this alternative.

Selected Grid Point Locations: A Year 2024 Alternative 2 single-point DNL noise exposure analysis was conducted for 11 noise sensitive receptor locations around the Airport (see **Table 4.1-11**).

TABLE 4.1-11
DNL AT SELECTED SITES – ALTERNATIVE 2 - 2024

Selected Grid Point Locations	Existing 2008 (DNL)	No Build 2019 (DNL)	Alt 2 2019 (DNL)	Alt 5 2019 (DNL)	No Build 2024 (DNL)	Alt 2 2024 (DNL)	Alt 5 2024 (DNL)
1	50.8	51.0	47.1	47.1	51.2	47.2	47.2
2	52.9	53.2	50.5	50.6	53.3	50.7	50.7
3	47.0	47.3	46.5	46.5	47.4	46.6	46.6
4	47.5	47.8	47.8	47.8	47.9	47.9	47.9
5	55.0	55.3	55.7	55.6	55.5	55.8	55.7
6	53.9	54.2	54.4	54.4	54.3	54.5	54.5
7	47.6	47.9	47.4	47.5	48.0	47.5	47.6
8	47.2	47.5	47.4	47.5	47.6	47.5	47.6
9	48.7	49.0	47.9	48.0	49.1	48.0	48.1
10	49.5	49.8	49.0	49.1	49.9	49.2	49.3
11	47.2	47.5	47.4	47.5	47.6	47.5	47.6

Source: URS Corporation, 2009

4.1.4.3 Alternative 5 – Year 2024

Alternative 5 proposes a runway extension of 1,896 feet on the runway 4 end and an 800-foot displaced threshold. The Runway 22 threshold would be relocated 902 feet resulting in a 6,492 foot runway. Runway 15-33 remains unchanged from the No Build Alternative.

DNL Contours: Noise exposure contours resulting from the Year 2024 Alternative 5 area depicted as DNL contours in **Exhibit 4.1-6**. Total land area within the DNL 65 dBA contour off-Airport property is approximately 13.9 acres (see **Table 4.1-12**). To the east of Runway 15 there are approximately 0.1 acres within the DNL 65 dBA contour off-Airport property. The Airport currently owns an avigation easement over this area and is zoned for commercial land use. Approximately 13.5 acres are off the Runway 4 end over a parcel zoned for commercial land use and is proposed for land acquisition under the Build Alternatives to accommodate the runway extension. Approximately 0.3 acres of the DNL 70 dBA contour are outside the Airport property line off the Runway 4 end which is proposed for land acquisition.

TABLE 4.1-12
ACREAGE OFF-AIRPORT WITHIN DNL – ALTERNATIVE 5 - 2024

DNL	No Build 2019 (Acres)	Alt 2 2019 (Acres)	Alt 5 2019 (Acres)	No Build 2024 (Acres)	Alt 2 2024 (Acres)	Alt 5 2024 (Acres)
DNL 65 dBA	6.0	18.3	12.5	6.9	18.7	13.9
DNL 70 dBA	0.4	0.4	0.4	0.5	0.4	0.3
DNL 75 dBA	0.0	0.0	0.0	0.0	0.0	0.0

Source: URS Corporation, 2009

Affected Population: The FAR Part 150 land use compatibility guidelines indicate that residential land use is considered incompatible at or above DNL 65 dBA. No residential areas are inside the DNL 65 dBA contour for this alternative.

Selected Grid Point Locations: A Year 2024 Alternative 5 single-point DNL noise exposure analysis was conducted for 11 noise sensitive receptor locations around the Airport (see **Table 4.1-13**).

TABLE 4.1-13
DNL AT SELECTED SITES – ALTERNATIVE 5 - 2024

Selected Grid Point Locations	Existing 2008 (DNL)	No Build 2019 (DNL)	Alt 2 2019 (DNL)	Alt 5 2019 (DNL)	No Build 2024 (DNL)	Alt 2 2024 (DNL)	Alt 5 2024 (DNL)
1	50.8	51.0	47.1	47.1	51.2	47.2	47.2
2	52.9	53.2	50.5	50.6	53.3	50.7	50.7
3	47.0	47.3	46.5	46.5	47.4	46.6	46.6
4	47.5	47.8	47.8	47.8	47.9	47.9	47.9
5	55.0	55.3	55.7	55.6	55.5	55.8	55.7
6	53.9	54.2	54.4	54.4	54.3	54.5	54.5
7	47.6	47.9	47.4	47.5	48.0	47.5	47.6
8	47.2	47.5	47.4	47.5	47.6	47.5	47.6
9	48.7	49.0	47.9	48.0	49.1	48.0	48.1
10	49.5	49.8	49.0	49.1	49.9	49.2	49.3
11	47.2	47.5	47.4	47.5	47.6	47.5	47.6

Source: URS Corporation, 2009

4.1.4 MITIGATION MEASURES

A detailed grid analysis was conducted for this EA to identify any noise-sensitive areas that would experience an increase of DNL 1.5 dBA or more within the DNL 65 dBA contour as a result of either Build Alternative. As indicated in the analysis results, no significant noise impacts would occur over any noise sensitive areas at or above DNL 65 dBA as a result of any of the alternatives in either 2019 or 2024, when compared to the No Build Alternative exposure. Therefore, no mitigation measures are required.

4.2 COMPATIBLE LAND USE

The compatibility of existing and planned land uses in the vicinity of an airport is usually associated with the extent of the airport's noise impacts. In addition, if the proposed projects have the potential for disruption of communities, relocation of as a result of property acquisition, and induced socioeconomic impacts, then the effects of land use would also be analyzed.

The FAA has adopted guidelines regarding the compatibility of land uses with various levels of DNL exposure. These guidelines are consistent with land use compatibility guidelines developed by other Federal agencies such as the EPA and U.S. Department of Housing and Urban Development (HUD). It should be noted that the FAR Part 150 land use compatibility guidelines shown in **Exhibit 3.3-1** do not constitute a Federal determination that a specific land use is acceptable or unacceptable under Federal, State, or local laws. The responsibility for determining acceptable land uses rests with the local authorities through their zoning laws and ordinances.

4.2.1 IMPACT POTENTIAL – NOISE

Using the criteria established in FAA Order 1050.1E, a significant noise impact would not occur with any of the alternatives as the proposed projects would not cause a noise-sensitive area to experience an increase in noise of DNL 1.5 dBA or more at or above DNL 65 dBA noise exposure when compared to the No Build Alternative for the same timeframe. As identified in **Section 4.1**, no incompatible off-Airport land use due to cumulative aircraft noise exposure will result from either proposed Build Alternative in either 2019 or 2024.

4.2.2 IMPACT POTENTIAL – LAND USE AND ZONING

The proposed improvements would occur on land currently zoned I-1 (Select Industrial District), CL (Limited Industrial District), CP (Countryside Preservation), and R10A (Residential District) (refer back to **Exhibit 3.1-2**). Land on Airport property is zoned for and committed to aviation related uses and is therefore compatible. Parcels located to the northwest, southeast, and south of the Airport that contain obstructions proposed for removal is zoned I-1 and CP. Avigation easements are to be obtained on these parcels. Land that is located to the south and southeast of the Airport that is needed for the future RPZ and MALSR is zoned I-1 and R-10A. These parcels are to be obtained via fee-simple acquisition under both Build Alternatives and will become part of the Airport zone.

This analysis considered both existing and future land use plans and zoning ordinances for the Town of Easton and Talbot County. The *Draft Town of Easton Comprehensive Plan* notes that much of the land surrounding the Airport lies within the Town of Easton and zone for industrial uses. The Plan states that "*provided that airport clear zones are respected and that uses are restricted to something like warehousing or storage on those properties potentially at risk to an aircraft accident, this should be sufficient to minimize future conflicts in this area."* The area within the Town limits surrounding the Airport is not subject to any special airport-related zoning requirements; however, the Plan notes that airport-specific zoning requirements could be added in a future revision of the Town's Zoning Ordinance.

The *Talbot County Comprehensive Plan* (February 2005) states that "*County policies should encourage the continued vitality of the Easton Airport, by protecting the airport from encroachment from residential, retail or commercial uses. Compatible uses, such as airport related businesses and light industry should be encouraged in appropriate areas near the airport. Current zoning regulations prohibit residential uses adjacent to the airport and control the height of structures within the clear zones of the runways*." In addition, the Plan states that the County should continue to acquire avigation easements around the Airport as opportunities arise.

Based on the above information, it can be concluded that neither of the two Build Alternatives will be incompatible with existing and proposed land uses and will be consistent with local plans.

There are no land use compatibility issues associated with the No Build Alternative.

4.3 SOCIOECONOMIC IMPACTS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

An analysis of potential socioeconomic impacts was performed to determine whether the proposed projects would cause relocation of residences without sufficient available replacement housing; extensive relocation of community businesses creating a severe economic hardship for the community; disruption of local traffic patterns that would substantially reduce the Level of Service of roads serving the Airport and its surrounding communities; and a substantial loss in community tax base.

4.3.1 SOCIOECONOMIC IMPACTS

4.3.1.1 No Build Alternative

With implementation of the No Build Alternative, no development would occur; therefore, there would be no adverse socioeconomic impacts involving the relocation of residences and businesses or the disruption of local traffic patterns. However, with implementation of the No Build Alternative, the existing runway lengths would remain; the deficient runway lengths would continue to force existing based aircraft and current transient operators to depart ESN with less than optimal fuel and/or passenger loads. In addition, the Airport would not be in compliance with FAA design standards and would risk forfeiting their existing grant assurances.

4.3.1.2 Alternative 2

Under Alternative 2, the following property interests would be required (see **Exhibit 4.3-1, Exhibit 4.3-3**, and **Table 4.3-1**):

● Three residences located on Hazelwood Drive (Golshani, Bushe, and Apple) are located within the future RPZ of Runway 4-22. Fee-simple acquisition would be required.

● A vacant parcel of land owned by Mears Properties, Inc. is located within the future RPZ of Runway 4-22. Fee-simple acquisition would be required.

● A portion of a vacant parcel owned by Easton Church of the Nazarene, Inc. is located within the future RPZ of Runway 4-22. Fee-simple acquisition would be required.

● The property currently owned by Easton Exchange, LLC is located within the future RPZ of Runway 4-22. Fee-simple acquisition would be required. Easton Exchange, LLC leases a portion of the large building to Global Defense Technology and Systems, Inc and the remaining portion to the Talbot County Government. The property to be acquired totals 58.19 acres. To date, numerous meetings have occurred between the Town of Easton, Talbot County, and Global Defense Technology and Systems, Inc regarding this proposed acquisition in an attempt to provide appropriate nearby facilities to accommodate their need to relocate (see **Appendix B**). No appraisal of the property has yet been performed. Once this proposed project receives approvals from all necessary reviewing authorities and once adequate funding is

obtained, an appraisal, review appraisal, and purchase negotiations will be performed. Since it is the intention of the Town and the County to relocate the private business to a location within the immediate vicinity of the Airport, no impacts to the local economy are anticipated. In addition, there would be no impact to low income or minority populations.

• Approximately 0.37 acres of a 24.46 acre parcel of land owned by the Lowe's Home Center, Inc. is located within the future Runway 22 RPZ. Although fee-simple acquisition is recommended by the FAA in order for the Airport to control the land uses within the RPZ, an avigation easement may be possible over this portion of the parcel. Currently the land is undeveloped. No structures are located within the parcel.

• Approximately 0.34 acres of a 2.17 acre parcel of land owned by the Norris Land Company, LLC is located within the future Runway 22 RPZ. Although fee-simple acquisition is recommended by the FAA, an avigation easement may be possible over this parcel. Currently the land is used as a parking lot for a used car sales operation. No structures are located on the parcel.

• Approximately 25 parcels contain obstructions to the future Runway 4-22 14 CFR Part 77 surfaces. Acquisition of avigation easements would be required over these parcels.

• Approximately 10 parcels contain obstructions to the existing Runway 15-33 14 CFR Part 77 surfaces. Acquisition of avigation easements would be required over these parcels.

• Approximately 0.17 acres of a 313.31 acre parcel of land is located within the existing Runway 15 RPZ. Although fee-simple acquisition is preferred, an avigation easement may be possible over this 0.17 acre of land since this parcel is held within a conservation easement which strictly limits development. Thus, it is unlikely that any future structure would be constructed within the portion that is located within the existing RPZ.

• Four parcels are located within the existing Runway 33 RPZ. The RPZ does not encroach upon any buildings on three of the four parcels; therefore, an avigation easement may be possible over these parcels. Based upon preliminary engineering, the RPZ does encroach upon a portion of a small portion of a building on the remaining fourth parcel. During the design phase of this project, a more detailed survey will be conducted to determine the extent of the encroachment of the RPZ on this parcel.

TABLE 4.3-1
SUMMARY OF LAND ACQUISITION – ALTERNATIVE 2

Type of Land Acquisition	Number of Parcels	Number of Acres
Fee Simple Acquisition	10	92.7
Avigation Easement	41	13.6
Total Land Acquisition	51	106.3

Source: URS Corporation, 2009

4.3.1.3 Alternative 5

The property interests required with Alternative 5 similar to those required for Alternative 2 with the exceptions noted below (see **Exhibit 4.3-2**, **Exhibit 4.3-3**, and **Table 4.3-2**):

- Approximately 0.92 acres of a 24.46 acre parcel of land owned by the Lowe's Home Center, Inc. is located within the future Runway 22 RPZ under Alternative 5. Although fee-simple acquisition is recommended by the FAA in order for the Airport to control the land uses within the RPZ, an avigation easement may be possible over this portion of the parcel. Currently the land is undeveloped. No structures are located within the parcel.

- Approximately 0.84 acres of a 2.17 acre parcel of land owned by the Norris Land Company, LLC is located within the future Runway 22 RPZ under Alternative 5. Although fee-simple acquisition is recommended by the FAA, an avigation easement may be possible over this parcel. Currently the land is used as a parking lot for a used car sales operation. No structures are located on the parcel.

TABLE 4.3-2
SUMMARY OF LAND ACQUISITION – ALTERNATIVE 5

Type of Land Acquisition	Number of Parcels	Number of Acres
Fee Simple Acquisition	10	92.7
Avigation Easement	43	14.4
Total Land Acquisition	53	107.1

Source: URS Corporation, 2009

4.3.2 ENVIRONMENTAL JUSTICE

The analysis of potential environmental justice impacts performed as part of this EA is intended to determine if the proposed projects would cause disproportionately high and adverse human health or environmental effects on minority and low-income populations.

As discussed in **Section 3.2**, the Census Block Group in which the Airport is located contains 6.8% minority population and is not considered to be a low-income area. Therefore, no impacts would result to

minority and/or low income populations with implementation of any of the Build Alternatives as well as the No Build Alternative.

4.3.3 CHILDREN'S HEALTH AND SAFETY RISKS

Impact significance with regard to the protection of children was assessed with regard to whether the proposed projects or one of its components would conflict with the requirements of Executive Order 13045. The proposed projects would not result in noise increases off-Airport when compared to the No Build Alternative and the quality of life in the areas surrounding ESN would not be altered by the proposed development; therefore, upon review of this Order, it was determined that the proposed development would not create any environmental health and safety risks that may disproportionately affect children.

4.3.4 MITIGATION MEASURES

All of the property acquisitions would be performed to ensure conformance with the Public Law 91-646, the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, and FAA Advisory Circular 150/5100-17, *Land Acquisition and Relocation Assistance for Airport Improvement Program Assisted Projects*. These regulations provide uniform and equitable treatment of persons displaced from their homes or businesses by federally assisted programs.

Before initiating negotiations, the property desired to be acquired would be appraised. The owner or owner's representative would be given the opportunity to accompany the appraiser during the appraiser's inspection of the property. A fair market price will then be established by the Airport, which it believes is adequate compensation for the property. The amount would not be less than the approved appraised value of the property. A written offer would then be presented to the owner to acquire the property for the full amount believed to be just compensation. The date that this written offer is presented is defined in the Uniform Act as the "initiation of negotiations." This initiation of negotiations typically establishes eligibility for relocation payments for displaced persons who were occupants on the property as of that date.

Families and individuals displaced from their dwellings would be eligible to receive two kinds of relocation payments: one to cover moving and related expenses and one to assist in obtaining a replacement dwelling. The displaced family or families cannot be required to move unless comparable housing is available.

4.4 SECONDARY (INDUCED) IMPACTS

The analysis of potential secondary (induced) impacts is intended to determine whether the proposed projects would cause shifts in patterns of population movements and growth, public service demands, and changes in business and economic activity to the extent influenced by airport development.

4.4.1 IMPACT POTENTIAL

The implementation of any of the Build Alternatives would not cause shifts in patterns of population movements and growth, public service demands, and changes in business and economic activity to the extent influenced by Airport development. However, a temporary increase in economic activity in both the construction and building material supply sectors of the local economy is anticipated with either Build Alternatives. These jobs generated by construction activities would be of a relatively short duration; however, the proposed projects could potentially stimulate secondary economic impacts through increased aviation related employment opportunities as the Airport continues to improve its facilities.

Because of the inadequate runway length at ESN, some aircraft that operate at the Airport must modify their takeoff configurations (amount of fuel and/or passengers) under certain weather conditions. Operators of these aircraft subsequently go to other airports in the area to purchase fuel or pick up passengers in route to their final destination. With implementation of the Build Alternatives, operators would be able to take off with their full load of passengers and the needed amount of fuel to reach their destination, thus increasing fuel sales at the Airport. Overall, the proposed projects can be expected to cause a positive change in the existing economy of Talbot County.

The No Build Alternative would allow for existing revenue producing elements to continue at ESN; however, it would not allow for the Airport to grow and expand its revenue base.

4.4.2 MITIGATION MEASURES

No mitigation measures are required.

4.5 AIR QUALITY

In accordance with FAA Order 5050.4B, because the forecast annual activity levels at ESN are not expected to exceed 180,000 GA aircraft operations, a quantitative assessment of operational air emissions related to the proposed projects at ESN, including an emissions inventory or dispersion analysis, is not required. Additionally, the Talbot County area is currently in attainment of all applicable federal and state air quality standards and regulations, and as such no General or Transportation Conformity Determinations under the CAA are necessary. Notably, however, for disclosure purposes and as recommended by the NEPA and FAA guidelines, an emissions inventory of construction-related air emissions expected to occur as a result of the proposed improvements at the Airport has been developed. Construction activities are the only source of direct or indirect emissions associated with the improvements at ESN.

4.5.1 METHODOLOGY

Again, because FAA guidelines do not require a quantitative analysis of air quality impacts for proposed projects at airports with less than 180,000 projected annual GA aircraft operations, a discussion of analysis methodology relative to operational emissions is not necessary.

For preparation of the ESN construction emissions inventory, a construction schedule including the expected level of construction activity, the duration of construction, and the equipment used was developed based upon equipment estimates and scheduling for similar projects at another airport (Baltimore Washington Thurgood Marshall International Airport) In summary, the following ESN improvements were included in the construction emissions inventory calculations:

- Taxiway A Extension;
- Extension of Runway 4-22 and Connecting Taxiways; and
- Construction of Airport Service Road.

Maryland-specific emissions factors for equipment exhaust emissions were developed using the EPA approved computer models MOBILE6.2 and NONROAD, and applied to expected equipment activity factors such as brake specific horsepower, expected hours of use and equipment load factor. Importantly, construction was assumed to occur during 2011, so emissions factors developed for the analysis relate to that calendar year. Estimation of emissions from asphalt paving and disturbance of unpaved areas were computed following EPA guidance, using emissions factors found in relevant publications. Refer to **Appendix F** for additional details on construction emissions calculation methods. **Note**: Although the expected construction year is 2019, 2011 emissions data were used to provide a conservatively high emissions estimate for the project components and prevent an underestimation of the total project emissions. Generally speaking, emissions from motor vehicles and construction equipment are assumed to decrease in future years due to technological improvements to the engines, better emissions controls, and more stringent environmental regulations being "phased-in". The approach applied in the air quality analysis assumes a 2011 fleet because it would comprise older, higher-emitting vehicles and equipment relative to the future year 2019, resulting in a conservatively high emissions estimate

4.5.2 IMPACT POTENTIAL - NO BUILD ALTERNATIVE

Because annual activity levels at ESN are not expected to exceed 180,000 aircraft operations under the No Build Alternative, per FAA Order 5050.4B no quantitative assessment of operational emissions is required. Refer to **Table 3.4-4** for a qualitative description of the pollutants commonly emitted at airports.

4.5.3 IMPACT POTENTIAL – ALTERNATIVES 2 AND 5

The following sections provide general discussions in terms of both operational and construction emissions associated with the proposed projects at ESN. Importantly, because the Talbot County area is currently designated "attainment" of all NAAQS, a General or Transportation Conformity analysis as mandated by the CAA is not required.

4.5.3.1 Operational Emissions

Again, because annual activity levels at ESN are not expected to exceed 180,000 aircraft operations under the Build Alternative, per FAA Order 5050.4B no quantitative assessment of operational emissions

is required. Refer to Table **3.4-3** for a qualitative description of the pollutants commonly emitted at airports.

4.5.3.2 Construction Emissions

Construction emissions associated with airport development projects are considered a potential, yet temporary, source of air emissions. Generally speaking, NO_x from on- and off-road equipment exhaust may occur associated with heavy duty diesel-fueled haul trucks. Emissions of CO are also associated with gasoline-fueled equipment or individual employee vehicles. Gasoline exhaust can also contribute to VOC levels, but evaporative VOC emissions from asphalt paving operations may also occur depending on the dimensions of the paved area. Finally, the entrainment of PM as fugitive dust from construction components including materials storage, travel on unpaved roadways, demolition, site clearing and other activities that disturb a large surface area can contribute to the total project-related PM emissions.

Construction activities associated with the proposed projects are expected to include, but may not be limited to: land clearing, grading and excavation; construction of pavement areas, construction of stormwater management areas; and establishing a temporary construction staging site on the airfield. These activities would involve the use of vehicles, construction equipment, and machinery; fuels and lubricants; and storage and use of construction materials.

The results of the construction emissions inventory for the proposed project improvements outlined in **Section 4.5.1** are summarized in **Table 4.5-1**. As shown, the project-related construction emissions for the quantified improvements total 2.56 tons of VOC, 17.31 tons of CO, 22.46 tons of NO_x, 1.07 tons of SO_2, 1.46 tons of PM_{10} and 1.01 tons of $PM_{2.5}$. Because the Talbot County area is currently in attainment of all air quality regulations, no further assessment of these emissions totals are required.

4.5.3 MITIGATION MEASURES

Construction-related air quality mitigation measures aimed at reducing the occurrence and potential impacts from “fugitive” dust may also be implemented. These measures could include (but are not necessarily limited to) the following:

- Apply non-toxic soil stabilizers to all inactive construction areas including areas with disturbed soils and stockpiles of raw materials.
- Stabilize on-site truck haul routes and staging areas with dust-prevention materials.
- Reduce truck speeds on haul routes to minimize dust re-entrainment.
- Remove mud and dirt from haul truck wheels and cover truck bodies before leaving the construction site(s).
- Permanently cover all ground surfaces with vegetation or impervious materials as soon as practicable.
- Post a publicly visible sign with the contact information for reporting dust complaints.

TABLE 4.5-1
ESN CONSTRUCTION EMISSIONS INVENTORY

	2011 Emissions (tons)					
	VOC	**CO**	**NO_x**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Taxiway A						
Off-road Equipment	0.03	0.33	0.30	0.06	0.04	0.04
On-road Equipment	0.15	0.96	1.29	<0.01	0.04	0.03
Asphalt Paving	0.01					
Fugitive Dust					<0.01	<0.01
Subtotal	0.19	1.29	1.59	0.06	0.08	0.07
Runway 4-22 Extension						
Off-road Equipment	0.15	1.68	1.54	0.33	0.18	0.18
On-road Equipment	0.74	4.90	6.58	0.02	0.21	0.15
Asphalt Paving	0.03					
Fugitive Dust					0.10	0.01
Subtotal	0.92	6.58	8.12	0.35	0.49	0.34
Runway 4-22 Connecting Taxiways						
Off-road Equipment	0.09	1.02	0.93	0.19	0.11	0.11
On-road Equipment	0.45	2.97	3.99	0.01	0.13	0.09
Asphalt Paving	0.02					
Fugitive Dust					0.02	<0.01
Subtotal	0.56	3.99	4.92	0.20	0.26	0.20
Airport Service Road						
Off-road Equipment	0.18	1.14	2.05	0.44	0.25	0.24
On-road Equipment	0.65	4.31	5.78	0.02	0.19	0.14
Asphalt Paving	0.06					
Fugitive Dust					0.19	0.02
Subtotal	0.89	5.45	7.83	0.46	0.63	0.40
GRAND TOTAL	2.56	17.31	22.46	1.07	1.46	1.01

Source: KB Environmental Sciences, Inc., 2009.

4.6 WATER RESOURCES

4.6.1 IMPACT POTENTIAL – NO BUILD ALTERNATIVE

The No Build Alternative would not improve or worsen the quality of the Airport runoff into Glebe Creek and Goldsborough Creek. Under this scenario, the existing stormwater management system, which incorporates three stormwater management facilities near the South Apron, along with a series of underground pipes that eventually outfall into both Glebe Creek and Goldsborough Creek at four

locations, would remain unchanged. As a result, no significant adverse effects on surface water quality would occur.

4.6.2 IMPACT POTENTIAL – ALTERNATIVES 2 AND 5

Alternatives 2 and 5 only vary by the amount that the Runway 22 end threshold is relocated; the amount of pavement to be added is the same with either Build Alternative. Thus, the potential impacts to water resources will be addressed herein for both Build Alternatives.

The Build Alternatives both have the potential to cause temporary and long-term effects on the water quality of Glebe Creek and Goldsborough Creek. Temporary impacts during construction operations could involve significant increases in turbidity, suspended solids, and dissolved solids, all of which would affect the aquatic habitat both during construction and for a period of time after. Long-term effects would be those associated with the increased impervious surfaces created under both Build Alternatives and the resulting potential for greater volumes of stormwater runoff containing volatile organic compounds and other hydrocarbons to enter the stormwater management system. Proposed mitigation measures are discussed for the alternatives below.

4.6.3 MITIGATION MEASURES

Mitigation of potential water quality impacts associated with the proposed Build Alternatives would involve a combination of temporary measures to be implemented during construction for control of erosion and sedimentation, along with permanent measures to provide adequate stormwater management infrastructure for the increased surface runoff volumes.

The *Stormwater Management Act of 2007* requires establishing a comprehensive process for stormwater management approval, implementing Environmental Site Design (ESD) to the maximum extent practicable, and ensuring that structural practices are used only where absolutely necessary. The proposed development on the Airport has been divided into 176 half-acre or less sub-drainage areas to determine preliminary stormwater management design for the development associated with the proposed projects. Within the 176 sub-drainage areas, 77 ESDs facilities are possible to adequately store and treat the project-related storm flows (see **Exhibit 4.6-1**). By using ESDs, the water quality volume (WQv) and the Channel Protection Volume (CPv) requirements are addressed by replicating a Runoff Curve Number (RCN) for woods in good conditions for the 1-year rainfall event. These also minimize the need for larger, traditional stormwater management facilities.

In addition to the ESDs, five traditional extended detention facilities would be provided to store the required overbank flood protection volume at Points of Investigation (POIs) 1, 2, 4, 13 and 25. Each POI is located at the edge of Airport property and includes runoff from all proposed development on the Airport property, along with the existing development within the associated drainage areas. While the plans and details for these facilities would not be developed until the final design process, the fundamental design criteria for them is known and is presented below.

There are 99 sub-drainage areas that will not be treated through an ESD. Runoff draining through the nine sub-drainage areas that include portions of the Glide Slope Critical Area would not incorporate ESDs because of grading constraints. The additional 22 sub-drainage areas would not have ESDs because, should a micro-biorentention facility be used, there is not enough vertical drop to outlet the treated water back into the existing pipe system. In addition, there is not enough available space within the sub-drainage areas for grass swales.

The design of the 77 ESDs mentioned previously will involve several types of be micro-bioretention facilities. All of the micro-bioretention facilities would incorporate the same basic functional elements. Runoff would enter the facility through sheet flow. Once in the facility, it would pass through a filter bed mixture of sand, soil, and organic matter. Part of the filtered stormwater would infiltrate into the soil, while the remainder would return to the conveyance system though a serious of pipes. That piped system will then distribute the water into one of the five extended detention facilities before outletting the water into the local tributaries of both Glebe Creek and Goldsborough Creek.

As an alternative to micro-bioretention facilities, grass swales can be used as the ESD in sub-drainage areas 1C-A, 1C-N, 1C-M and 1C-J. The swales would capture the water through sheet flow, as it leaves the runway and convey it, while providing water quality treatment, before outletting it into one of the five extended detention facilities. Another alternative to micro-bioretention facilities is to use cisterns in drainage area 25 where the new hangars are proposed. The cisterns can be placed at each corner of the building to collect the rainwater and runoff from the roofs. The water can be stored and later used for irrigation or toilet flushing water. The cisterns provide an opportunity for water conservation and the possibility of reducing water utility costs by reusing the collected water. If cisterns are used instead of micro-bioretention facilities in drainage area 25, 10 additional ESDs could be accommodated.

In addition to ESDs and traditional extended detention facilities, 14.65 acres of existing pavement would be removed in Drainage Area 1A-1. **Table 4.6-1** shows the amount of treatment required by drainage area as well as the amount of treatment provided by ESDs and traditional stormwater management measures. As shown in the table, the required water quality treatment for the proposed projects in the Build Alternatives would be met. Additionally, to minimize the additional impervious area, the proposed Airport service road would be constructed using permeable pavement.

The stormwater management facilities that are mentioned previously are designed to result in no discharge of additional pollutant loads into State waters. Additionally, they are designed to maintain existing runoff quantity, thereby assuring no detriment to State waters.

Through implementation of the ESDs and traditional stormwater management facilities, it is anticipated that there will be minimal impacts on water quality in Glebe Creek, Goldsborough Creek and other surface water and groundwater resources.

TABLE 4.6-1
WATER QUALITY SUMMARY SHEET

DA	Required Treatment (AC)	Treatment Provided by ESD (AC)	Treatment Provided by other (AC)	Water Quality Deficit/ (AC)
1A-1	0	0	14.65	14.65
1C	2.29	0.65	0	-1.64
2A-1	0.44	0.41	0	-0.03
2A	0.53	0	0	-0.53
2E	3.70	0.79	0	-2.91
3A-1	0.21	0.21	0	0
4A-1	0.13	0.57	0	0.44
4A	0	.11	0	0.11
4B	0	0	0	0
13A-1	0	0	2.47	2.47
13E	4.35	1.98	0	-2.37
13G	0.45	0.12	0	-0.33
13L	0	0	1.31	1.31
13M	6.95	5.34	0	-1.61
25	10.08	1.83	0.49	-7.76
25A	0	0	2.58	2.58
25C-2	1.52	1.25	0	-0.27
26	0	2.14	2.86	5
Total	**16.00**	**15.40**	**6.85**	**9.11**

Source: URS Corporation, 2010.

4.7 FLOODPLAINS

Executive Order 11988 directs Federal agencies to take action to reduce the risk of flood loss; minimize the impacts of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial values served by floodplains. Agencies are required to make a finding that there is no practicable alternative before taking action that would encroach on a base floodplain based on a 100-year flood. Impacts to the 100-year floodplain can occur in two forms: directly through the changes to volumetric capacity of the floodplain or indirectly through an increase in the total volume of water arriving at and being conveyed by the floodplain.

4.7.1 IMPACT POTENTIAL – NO BUILD ALTERNATIVE

With implementation of the No Build Alternative, no development would occur; therefore, there would be no impact to floodplains.

4.7.2 IMPACT POTENTIAL – ALTERNATIVES 2 AND 5

As shown on **Exhibit 4.7-1**, with implementation of either Alternative 2 or Alternative 5, the only proposed project that would encroach upon the 100-year floodplain would be the removal of obstructions to the 14 CFR Part 77 surfaces of existing Runway 15-33.

4.7.3 MITIGATION MEASURES

Per the criteria established in FAA Order 1050.1E, the encroachment of the 100-year floodplain would not be considered significant as the proposed project would not have a high probability of loss of human life; would not likely have substantial encroachment-associated costs; and would not result in notable adverse impacts on natural and beneficial floodplain values.

In addition, according to the Town of Easton's Floodplain Ordinance, development is not prohibited within the 100-year floodplain. Structures may be constructed in the floodplain provided that they are either elevated above the level of the 100-year flood or otherwise flood-proofed in an acceptable manner. Thus, since no structures are proposed within the 100-year floodplain and only trees are to be removed, no floodplain impacts are anticipated.

4.8 COASTAL RESOURCES

4.8.1 IMPACT POTENTIAL – NO BUILD ALTERNATIVE

There are no impacts to the Coastal Zone with implementation of the No Build Alternative.

4.8.2 IMPACT POTENTIAL – ALTERNATIVES 2 AND 5

Since Talbot County is located within the Coastal Zone, pursuant to the CZMA and Maryland's CZMP, a consistency determination must be submitted to the MDE for review and concurrence to ensure that all elements of the proposed projects are consistent with the protection of Maryland's Coastal Zone.

4.8.3 MITIGATION MEASURES

A request for a Federal Consistency Determination, pursuant to Section 307 of the Federal Coastal Zone Management Act of 1972, as amended, will be submitted to the MDE.

4.9 WETLANDS

4.9.1 IMPACT POTENTIAL – NO BUILD ALTERNATIVE

The implementation of the No Build alternative would not impact waters or wetland resource and would, therefore, not require mitigation.

4.9.2 IMPACT POTENTIAL – ALTERNATIVES 2 AND 5

As shown on **Exhibit 4.9-1**, the following project components would impact wetland and water resources; obstruction removal for Runway 15-33 and Runway 4-22, construction of the Airport Service Road, East Apron, and extension of Taxiway A under either Alternative 2 or 5. **Note**: Alternatives 2 and 5 only vary by the amount that the threshold for Runway 22 is displaced; therefore, these alternatives encompass the same footprint. Thus, for graphical purposes, Alternative 2 is shown on **Exhibit 4.9-1**.

Nontidal wetland impacts, as currently proposed, include 5.44 acres of palustrine forested wetlands (PFF) cut for obstruction removal, and 2.93 acres of palustrine emergent wetlands (PEM) and 5.82 acres of palustrine scrub-shrub wetlands (PSS) to be filled (see **Table 4.9-1**). No forested wetlands would be filled.

TABLE 4.9-1
PROPOSED WETLAND IMPACTS

Proposed Projects	Water Impact (acres)	PEM Impact (acres)	PSS Impact (acres)	PFO Impact (acres)	Total Impact (acres)
Alternative 2: RW Extension (6,400 Feet)	0	1.42	0.20	0	1.62
Alternative 5: RW Extension (6,492 Feet)	0	1.42	0.20	0	1.62
Projects Common to All Build Alternatives					
East Apron and Hangars	0	0.25	0.09	0	0.34
Southwest Apron Hangars	0	0	0	0	0
Existing RW 15-33 RPZ Property Interests	0	0	0	0	0
Airport Service Road	0	0.80	0	0	0.81
Existing RW 4-22 Obstructions	0	0.46	5.53	0.53	6.52
Existing RW 15-33 Obstructions	0	0	0	4.91	4.91
Total Alt 2	**0**	**2.93**	**5.82**	**5.44**	**14.2**
Total Alt 5	**0**	**2.93**	**5.82**	**5.44**	**14.2**

Source: Restoration Ecological Services, Inc, 2009.

4.9.3 MITIGATION MEASURES

Nontidal wetland impacts, as currently proposed, include 5.44 acres of forested wetlands cut for obstruction removal, and 2.93 acres of emergent wetlands and 5.82 acres of scrub-shrub wetlands to be filled. No forested wetlands would be filled. Mitigation ratios under State and Federal regulations require 1:1 replacement for wetland conversion from forested to emergent or scrub-shrub, 1:1 replacement for permanent emergent wetland impacts such as fill, and 2:1 replacement for permanent scrub-shrub impacts. Total compensatory mitigation would be 5.44 acres for the forested wetland clearing, 2.93 acres of emergent wetland replacement, and 11.64 acres of scrub-shrub wetland replacement or 20.01 acres of wetland mitigation.

No approved wetlands mitigation bank currently exists in Talbot County. Therefore, the Airport would have to provide mitigation either through property acquisition and wetland construction or purchasing the right to create wetlands on private property. Mitigation sites need to be more than 10,000 linear feet from

the end of the runways to meet FAA approval. Preferred areas for wetland construction would be either previously impacted nontidal wetlands or fields containing hydric soils. Most previously impacted wetlands have been developed or drained for agricultural use and are not available for restoration.

Since most properties in Talbot County do not have extensive areas suitable for wetland mitigation, it was assumed that multiple properties would be needed to fully provide the 20.01 acres of mitigation required. Five properties of varying suitability have been located that could be used for wetlands mitigation (see **Table 4.9-2** and **Exhibit 4.9-2**). Some areas could be converted to wetlands with relatively little effort; however, most would require more extensive excavation and grading to provide adequate hydrology.

TABLE 4.9-2
POTENTIAL WETLAND MITIGATION LOCATIONS

Site #	Site Address	Owner	Parcel Size (acres)	Potential Mitigation (acres)
1	Gregory Road	Tunis Partnership LLP	35.6	5.5[1]
2	Plugge Road	Phillip E Councell, Jr	128.8	10
3	Old Cordova Road	Gannon Family LP	141	27
4	9712 Three Bridges Branch Road	Phillip E Councell, Jr	200	8
5	Baileys Neck Road	Bradford S. Kline	42.6	14.25[2]

Source: Restoration Ecological Services, Inc., 2010.
[1] Existing seasonal waterfowl impoundment
[2] Includes 4.6 acres previously approved for wetland mitigation

4.10 FISH, WILDLIFE, AND PLANTS

4.10.1 MARYLAND FOREST CONSERVATION ACT

In accordance with the Annotated Code of Maryland (Natural Resource Article, Title 5, Subtitle 16) and the COMAR Title 08, Subtitle 19, Forest Conservation, the Forest Conservation Act (FCA) of 1991 requires that prior to the approval of any public or private subdivision, project plan, grading permit, or sediment control permit on a unit of land 40,000 square feet or greater, applicants must submit a FSD and Forest Conservation Plan (FCP) to the local reviewing authority, or if no local program has been established, to the Maryland Department of Natural Resources. The Town of Easton is the local reviewing authority for FCA compliance.

4.10.1.1 Impact Potential - No Build Alternative

The implementation of the No Build Alternative would not impact any forested resources or non-forested land; therefore, implementation would not require coordination with the Town of Easton pursuant to the FCA.

4.10.1.2 Impact Potential – Alternatives 2 and 5

As mentioned in **Section 4.0**, Alternatives 2 and 5 only vary by the amount that the Runway 22 threshold is relocated; therefore, the amount of pavement to be added with either Build Alternative would be the same. Therefore, the proposed runway extension, associated Taxiway A and MALSR would add approximately 341,536 square feet (7.84 acres) of impervious surface for Alternative 2 or Alternative 5.

The construction of the East Apron, hangar facilities, and associated parking and road access would convert 434,807 square feet (9.98 acres) of existing pervious to an impervious surface.

The construction of the conventional hangars on the Southwest Apron would convert up to 112,205 square feet (2.58 acres) of existing pervious to an impervious surface.

The construction of the Airport Service Road would convert 373,785 square feet (8.58 acres) of existing pervious to an impervious surface.

Approximately 1,866,331square feet (42.85 acres) and 226,449 square feet (5.20 acres) of trees are proposed for removal to the existing Runway 15-33, and future Runway 4-22 14 CFR Part 77 surfaces, respectively. An additional 596,223 square feet (13.69 acres) of ground obstruction will be removed by grading.

4.10.1.3 Mitigation Measures

A FSD for the Airport was submitted and approved by the Town of Easton in March 2008 (see **Appendix B**). A general FCP for the Airport was also submitted to the Town and approved in April 2008. Therefore, the next submittal for approval to the Town of Easton would be an amendment to the FCP for the preferred alternative and other construction that would create new impervious surfaces. Mitigation would be required for creating new impervious surfaces and removing trees that are not 14 CFR Part 77 surfaces.

According to previous coordination with the Town of Easton, the removal of 14 CFR Part 77 tree obstructions to the Airport's airspace for existing Runway 15-33 and the future Runway 4-22 was considered exempt from mitigation requirements of the FCA (see **Appendix B**). However, recent coordination with the Town has indicated that this exemption is being re-evaluated.

The Town has agreed to allow the Airport to pay into the Town of Easton Forest Conservation Fund as impacts occur in lieu of requiring reforestation or afforestation planting off-site.

4.10.2 Rare, Threatened, and Endangered Species

As discussed in **Section 3.13**, the only rare, threatened, or endangered species found to exist on or around the Airport is the DFS, which is federally endangered. Their known forested habitats have been identified and coordinated with the FWS.

4.10.2.1 Impact Potential – No Build Alternative

Implementation of the No Build Alternative would not impact DFS habitat.

4.10.2.2 Impact Potential –Alternatives 2 and 5

As shown on **Exhibit 4.10-1**, with implementation of either Alternative 2 or Alternative 5, approximately 32.4 acres of DFS habitat would be impacted by the removal of tree obstructions within the 14 CFR Part 77 surfaces of existing Runway 15-33. As described under Wetland Resources, since the Build Alternatives only vary by the amount that the threshold for Runway 22 is displaced, for graphical purposes, only Alternative 2 is shown on **Exhibit 4.10-1**.

4.10.2.3 Mitigation Measures

Impacts to DFS habitat typically requires mitigation at a 3:1 ratio through permanent protection of verified existing DFS habitat in the vicinity of the impact site. This would require a minimum of 97.2 acres of existing forested area containing DFS to be placed under a conservation easement. The FWS require that each site be a minimum of 30 acres; therefore up to 3 sites could be selected.

Using GIS data provided by the FWS identifying forests having potential DFS habitat, a list of properties was developed as potential DFS sites (**Table 4.10-1**). The parcel of greatest interest was a 104-acre County-owned parcel on Route 33 that had been partially used in the past for dredge spoil disposal. A camera survey was conducted between March 16, 2010 and April 12, 2010 per FWS guidelines. Five initial stations were established and surveyed from March 16, 2010 to March 31, 2010. Four of the cameras were then moved to different locations on the parcel and allowed to record from March 31, 2010 to April 12, 2010. DFS were recorded at 8 of the 9 camera stations. No DFS were recorded at Station 5, and only one sighting was recorded at Station 4. Results are provided in **Table 4.10-2** and **Table 4.10-3** and station locations are shown on **Exhibit 4.10-2**. The property contains a mosaic of seasonally flooded mature forested wetlands and forested uplands. Stations 4 and 5 were somewhat isolated by water.

TABLE 4.10-1
POTENTIAL DFS MITIGATION LOCATIONS

Site Address	Owner	Parcel Size (acre)	Forest Size (acre)	Known DFS Habitat
St. Michael's Road	County property	104.7	70.7	Yes
28278 Glebe Road	Needwood Farm, LLC	163.0	25.0	Yes
8305 Lee Haven Road	Lee Haven Farm LLC	60.0	60.0	Yes
28539 Marlboro Road	REMCO Properties	82.85	56.0[1]	Yes
Oxford Road / Alliance	Development Corp	197.67	197.67	Yes
Councell Road	Phillip E Councell, Jr	200.0	65.0	No
Island Creek area	Johnson Logging Co., Inc.	55.60	55.6	Yes
Longwoods Road	Norris E. Talyor	210.61	117.0	Yes
Longwoods Road	Phillip L Hutchison	223.84	46.5	Yes
27772 Sharps Road	Joel H. Maness	280.78	280.78	Yes
Bruff's Island Road	Mary Donnell Tighman	902.41	184.0	Yes
Plugge Road	Phillip E Councell, Jr	128.80	39.0[2]	Yes
Airport Road	Town of Easton	32.30	24.2[3]	Yes

Source: Restoration Ecological Services, Inc, 2010.
[1] 34 acres are held in an existing conservation easement; 22 acres are available.
[2] Approximately 16 acres within an existing conservation easement are available for purchase.
[3] Some of this forested area is proposed for removal; remaining forested area is protected.

TABLE 4.10-2
DFS CAMERA SURVEY (COUNTY-OWNED PARCEL) RESULTS: MARCH 16-31, 2010

		Mar 16	Mar 17	Mar 18	Mar 19	Mar 20	Mar 21	Mar 22	Mar 23	Mar 24	Mar 25	Mar 26	Mar 27	Mar 28	Mar 29	Mar 30	Mar 31
Stat.	**Species**	**Day 1**	**Day 2**	**Day 3**	**Day 4**	**Day 5**	**Day 6**	**Day 7**	**Day 8**	**Day 9**	**Day 10**	**Day 11**	**Day 12**	**Day 13**	**Day 14**	**Day 15**	**Day 16**
1	DFS	0	1	1	1	1	1	0	1	1	1	1	1	1	0	0	1
	GS	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0
2	DFS	0	1	0	1	1	1	1	1	1	0	1	1	1	0	0	0
	GS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	DFS	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1
	GS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	DFS	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	GS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	DFS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: Restoration Ecological Services, Inc, 2010.
GS: Gray squirrel

TABLE 4.10-3
DFS CAMERA SURVEY (COUNTY-OWNED PARCEL) RESULTS: MARCH 31 – APRIL 12, 2010

		Mar	April	April	April	April	April	April	April	April	April	April	April	April
		31	1	2	3	4	5	6	7	8	9	10	11	12
Stat.	Species	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13
6	DFS	0	1	1	1	1	1	1	1	0	1	1	2	1
	GS	0	0	0	0	0	0	0	0	0	0	1	0	0
7	DFS	0	0	0	0	0	0	0	0	0	1	1	0	0
	GS	0	0	0	0	0	0	0	0	0	0	0	0	0
8	DFS	0	1	0	1	1	1	1	1	1	1	0	0	0
	GS	0	0	0	0	0	0	0	0	0	0	0	0	0
9	DFS	0	0	0	1	0	1	0	0	0	1	1	1	0
	GS	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: Restoration Ecological Services, Inc, 2010.
GS: Gray squirrel

It is estimated, after subtracting the spoil disposal area and required 150 foot setback buffer from the road and residences, that 65 acres of the 104-acre County-owned parcel could possibly be used for DFS mitigation. Since this is roughly 30 acres short of the possible total needed, additional mitigation sites would be required. The FWS indicated that with the widespread use of the County property by DFS, adjoining properties would be considered as also being used by DFS and would not require separate camera surveys. These properties combined have a potential of 105 acres of possible DFS mitigation. Thus, letters were sent to the three adjoining properties to the east, north and west that contained adjoining forest. To date, preliminary discussions with these property owners have indicated that interest exists for placement of conservation easement on all or portions of their property. to inquire whether the property owners would be interested in allowing their property to be considered for DFS mitigation.

An additional mitigation option lies with 16-acres of approved and already protected DFS mitigation available at the property of Chip Councell on Plugge Road. The Airport purchased 21 acres for mitigation for the current Runway 4-22 Obstruction Removal project; the property owner is currently placing 30 acres into a conservation easement; therefore, 9 acres as well as previously protected areas are available for purchase.

Other properties identified in **Table 4.10-1** would need to be surveyed to verify the presence of DFS should additional mitigation options need to be generated. None of the owners of these properties have been contacted to date.

4.11 LIGHT EMISSIONS AND VISUAL IMPACTS

4.11.1 IMPACT POTENTIAL – LIGHT EMISSIONS

With implementation of either Build Alternative, a MALSR is proposed to extend off the Runway 4 end. **Exhibit 4.11-1** shows a typical MALSR configuration. The twelve light bar stations and sequenced flashing lights are spaced 200 feet apart along the runway centerline. The light-bar structures would range in height from in-pavement (approximately 2 feet) to 14 feet near Glebe Road. The overall typical length of the MALSR is 2,400 feet. The light bars would be located on property that would be acquired via fee-simple acquisition as part of the proposed action for either Build Alternative.

The Medium Intensity Approach Lighting System (MALS) portion of this system consists of a series of steady-burning runway threshold lights installed ten feet on center across the width of the runway, six steady-burning single light bars with five white light fixtures attached on each bar, and one triple light bar array that consists of three single light bars with five steady burning white light fixtures attached to each bar. The MALS lights have three intensity settings (high, medium, low). The approach light plane is 400 feet wide centered on the extended runway centerline. The MALS component is approximately 1,400 feet long. A portion of the MALS would be installed in-pavement on each runway end.

The Runway Alignment Indicator Lights (RAIL) component of the lighting system consists of five sequenced flashing lights (strobe lights) located beyond the MALS portion of the system, one light per stanchion. The first RAIL station is located approximately 200 feet past the last MALS light bar.

The MALSR can be activated by ATCT personnel or remotely by the pilot whose aircraft is equipped with the appropriate avionic systems.

The proposed MALSR for Runway 4 would be oriented towards Glebe Road. The area is flat and would be devoid of vegetation. Currently this land contains an industrial building, which would be demolished. The land would be graded and seeded.

Runway and taxiway edge lights would be constructed under both of the Build Alternatives. These lights would provide visual guidance to pilots by altering them to the location of the pavement edge so as to avoid maneuvering their aircraft off the hardened surface. These lights would only be illuminated during periods of reduced visibility. Taxiway lights are blue in color, spaced no more than 200 feet apart, and can be installed either in-pavement or approximately two feet above the pavement. Runway edge lights are usually white in color, spaced 200 feet apart, and are mounted approximately two feet above the pavement.

In summary, adverse light emissions to the natural and social environments are not expected to occur as a result of the proposed installation of visual guidance lighting systems associated with either Build Alternative. The light emissions that would be emitted from these systems do not significantly scatter light in levels sufficient to cause adverse visual impacts and are not expected to create an adverse additive

effect when coupled with the existing light emissions a the Airport and surrounding urbanized area to the south and southeast. Motorists traveling along Glebe Road and Route 322 may notice the light bar structures and lights associated with the MALSR; however, it is unlikely that they would experience either distraction or discomfort from such limited exposure.

The No Build Alternative would not require the installation of any visual guidance approach lighting systems or runway and taxiway edge lights. Therefore, no new light emissions impacts would be created.

4.11.2 IMPACT POTENTIAL – VISUAL IMPACTS

Potential visual impacts of the Build Alternatives were considered in accordance with FAA Order 1050.1E. The areas of consideration included areas of extent of earthmoving required to construct the proposed alternatives, the design of proposed new facilities, and the overall aesthetic integrity of the area.

The extent of earthmoving process during construction of either of the Build Alternatives would create a temporary visual disturbance of the landscape to the passersby. Portions of the woodland areas on all sides of the Airport would need to be cleared to conform with 14 CFR Part 77 guidelines.

Either of the proposed Build Alternatives would create both temporary visual disturbance during construction and long-term impacts to the existing viewscape of the area. Improvements associated with the proposed runway and taxiway construction would visually impact persons traveling along Glebe Road, Route 322, and Hazelwood Drive. The existing industrial building located immediately south of the Airport would be demolished with either Build Alternative and replaced with a graded maintained grassed area with a MALSR. In addition, three residences along Hazelwood Drive would be demolished and replaced by a graded maintained grassed area. Improvements associated with the removal of trees associated with 14 CFR Part 77 guidelines would visually impact persons traveling along Route 322 and Airport Drive. However, only trees that penetrate 14 CFR Part 77 surfaces would be removed. The understory would remain. Improvements associated with the east hangar and apron facilities would visually impact persons traveling along US Route 50. These visual impacts are considered minor in nature, as the changes are small and will be assimilated into the already urbanized viewshed with the passage of time.

4.11.3 MITIGATION MEASURES

No mitigation measures are required.

4.12 HAZARDOUS WASTE, POLLUTION PREVENTION, AND SOLID WASTE

4.12.1 METHODOLOGY

The overall purpose of this assessment was two-fold: 1) address the potential for known or potential environmental contamination, hazardous materials, and/or other regulated substances located in the vicinities of the proposed projects; and 2) identify the types and amounts of these materials that may occur as a result of the construction and operation of the proposed projects.

For the purposes of this assessment, the Study Area focused on the area contained within a roughly two-mile radius centered upon the intersection of the existing runways at ESN. This area encompasses all of the Airport property, adjoining land uses, and the locations of the proposed projects.

Much of the information gathered for this assessment was derived from an electronic environmental database records search prepared specifically for area. In summary, the primary data and information assessed included the following:

- A visual review of aerial photographs dating from 1959 to 2005; and
- Environmental regulatory agency database records.

Other information on the environmental features of the study area, including topography, soil stratigraphy, geologic formations, and surface and groundwater hydrology was similarly gathered electronically using information available from the USGS and the USDA.

The environmental records researched as part of the regulatory agency database review include reported petroleum or hazardous waste releases; permitted hazardous waste generation, transport, storage or disposal; presence of current or past hazardous waste disposal sites; permitted solid waste disposal facilities; AST and UST; as well as reported releases from storage tanks.

4.12.2 FINDINGS

The reported findings of the environmental records search, including locations of storage tanks, hazardous materials generators, unintentional releases and other regulated materials, are depicted on **Exhibit 4.12-1** and individually discussed in the following sections.

4.12.2.1 Environmental Features

The environmental records search, included as **Appendix G** of this document, presents a detailed description of the land uses, topography, soil stratigraphy and other geologic features, and surface and groundwater hydrology of the Study Area. In summary, the bedrock throughout the study area consists of stratified sediments with a generally western topographic gradient, signifying the likely direction of groundwater or contaminant flow. The soil profile is characterized as poorly drained silt and loam, with potential for a saturated zone to exist that would result in low hydraulic conductivity and potential seepage of contaminants moving through the soil. The depth to the water table in the area is less than 1 foot and the depth to bedrock is approximately 60 inches.

4.12.2.2 Historical Use

Early aerial photographs (e.g., 1959) of the Study Area show a runway and some nearby buildings, surrounded by mostly undeveloped land. Notably, the Airport access roadways, fuel farm and other ancillary airport facilities (as they exist today) do not appear on the aerial photographs until between 1981

and 1989. In the 2005 photograph, the taxiways on the ends of both existing runways at ESN were observed and the Airport is bounded on its southern and southeastern sides by residential areas, while land to the north and east is markedly less developed.

Table 4.12-1 summarizes the observations made from the review of all of the available aerial photographs.

TABLE 4.12-1
SUMMARY OF AERIAL PHOTOGRAPH REVIEW OF THE ESN AREA

Photo Date	General Description
1959	Site for existing runways appears cleared but runways or other airport structures are not visible. Surrounding property appears largely undeveloped.
1970	Runways are visible. No other airport facilities or structures appear.
1981	Fuel storage facility is visible. Land surrounding airport property shows increased development.
1989	Airport roadways, fuel facilities and hangars are visible. Runways show visible improvements (i.e. paving and marking).
1998	No major changes observed.
2005	Additional taxiways on the southern end of Runway 4-22 and southeastern end of Runway 19-33 have been constructed.

4.12.2.3 Hazardous Materials

The environmental records search revealed a number of sites on, or surrounding, the Airport property that are registered under the RCRA as generating, transporting, storing, treating and/or disposing of hazardous waste as defined by the Act. **Table 4.12-2** summarizes this information as it pertains to areas closest to the proposed projects at ESN.

As shown on **Exhibit 4.12-1**, three entities classified under RCRA as small quantity generators (SQG), meaning that they produce between 100 and 1,000 kg of hazardous waste per month, are reported. Additionally, two Conditionally Exempt Small Quantity Generators (CESQG), producing less than 100 kg of hazardous waste per month, exist in close proximity. Lastly, one nearby facility is listed as a RCRA Non-Generator (NonGen), signifying that it has been historically registered under RCRA but does not currently generate hazardous waste. More detailed information regarding these facilities, including addresses and contact information, is contained in **Appendix G.**

TABLE 4.12-2
SUMMARY OF RCRA REGISTERED HAZARDOUS MATERIALS GENERATORS

Category	Description	Registrants	Map ID
Small Quantity Generators (SQG)	Facilities which generate, transport, store, treat and/or dispose of hazardous materials on site, in quantities between 100 and 1,000 kg per month	Chesapeake Publishing Co.	E
		R&R Automotive Camcraft	D
		Wildlife International LTD	C
Conditionally Exempt Small Quantity Generators (CESQG)	Facilities which generate, transport, store, treat and/or dispose of hazardous materials on site, in quantities less than 100 kg per month	B/R Instrument Corp	A
		Lewis Autobody	B
Non-Generators (NonGen)	Facilities which have previously been registered under RCRA as hazardous materials generators, yet do not currently generate waste	Noble Motor Rebuilders	F

Source: Environmental Data Resources, Inc., 2009.

4.12.2.4 Solid Waste

The results of the environmental records search reveal no present or historical open dumps, landfills or solid waste generation facilities within two miles of the Study Area. Similarly, no present or historical limitations or prohibitions on Talbot County municipal solid waste disposal, treatment or disposal facilities has been documented.

4.12.2.5 Water, Wastewater, and Stormwater

Facilities or entities with the potential to release environmental contaminants into the surrounding surface waters, including open water bodies or stormwater catchments, or those facilities or entities that handle, discharge or treat effluent or wastewater, must comply with the CWA by registering with the National Pollutant Discharge Elimination System (NPDES). Registered NPDES facilities must report all such releases or water contaminants as defined by the CWA, as well as the means by which they demonstrate and maintain compliance with CWA regulations.

Importantly, the Permit Compliance System (PCS) database records consulted during the environmental records search show that two facilities in the Study Area currently possess NPDES permits. These permits are registered to the Hogs Neck Golf Course and Jensen's Hyde Park Waste. Notably, these entities are not located on ESN property, nor are in immediate vicinity of any of the proposed projects at the Airport.

4.12.2.6 Air Quality

Discharges of Hazardous Air Pollutants (HAPs) to the atmosphere were not identified from the environmental records search. Notably, however, the EPA AIRS database shows that one facility, the Easton Utilities Airport Park, is registered as a major stationary natural gas combustion source. The database records show that the source permit is current and that no violations have been reported. Criteria pollutant air emissions that could potentially result from the operation and construction of the Proposed Project are described and considered in **Sections 3.4** and **4.12** of this document, respectively.

4.12.2.7 Pesticide and Herbicide Usage

ESN and its tenants do not currently have the need for pesticide or herbicide applications at the level that would require regulation. EPA's Facility Index System (FINDS) records pertinent facility information including that relative to FIFRA, and some facilities on around ESN are listed in the FINDS database. However, none of these facilities are listed due to infractions or material involvement with FIFRA regulations.

4.12.2.8 Underground and Aboveground Storage Tanks

With respect to USTs and ASTs, the environmental database search comprising findings from state and tribal leaking underground storage tank (LUST) lists, records within the MDE's Oil Control Program database (OCPCASES), and registered UST/AST listings. From these listings, **Table 4.12-3** identifies those closest to the proposed Projects at ESN.

As shown, two entities, including the airport fuel farm, have been tracked by the MDE through their Oil Control Program due to unintentional releases. However, with the exception of the AST leak reported on nearby Old Centreville Road, all of these incidents have been inspected for compliance and are consequently under No Further Action.

All reported USTs, including those registered to ESN, are not currently used or have been removed. All 11 of the reported ASTs are actively used and show no current violations.

Additional information on the status, quantities, releases and remediation associated with all documented storage tanks on airport property can be found in **Appendix G**.

TABLE 4.12-3
SUMMARY OF STORAGE TANK AND OIL CONTROL PROGRAM FINDINGS

Category	Description	Registrants	Map ID	Status/Details
Oil Control Program (OCPCASES)	MDE program/database of leaks, spills, or other unintentional releases from UST, AST and other containers.	9247 Centreville Road	G	Claim Open
		Easton Airport Fuel Farm	H	Claim Closed
Underground Storage Tanks (UST)	MDE databases for current and historical USTs.	Coca-Cola Distribution Facility	I	Permanently Out of Use (2 tanks)
		Easton Airport	J	Permanently Out of Use (5 tanks)
		Easton Airport	K	Permanently Out of Use (3 tanks); Removed (1 tank)
		West and Callahan, Inc.	L	Permanently Out of Use
Above-ground Storage Tanks (AST)	MDE databases for current and historical ASTs.	Easton Airport	M	Six Tanks holding Aviation Gasoline, Jet Fuel, Diesel Fuel and Used Oil; No Violations
		J. Marion Bryan and Sons, Inc.	N	Five Tanks holding Motor Oil, Hydraulic Oil, Used Oil, Gasoline and Diesel Fuel; No Violations

4.12.2.9 Other Environmental Records

Noble Motor Rebuilders, located approximately 1.3 miles from ESN, has been identified in EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database as a state-lead cleanup site associated with the release of an undisclosed hazardous waste. Entities reported in this database have been reported to EPA by states, municipalities or other agencies for having violated provisions in Section 103 et seq. of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Assessment of this site began in 1981 and was concluded in 1999. No further action has been taken to date.

4.12.3 IMPACT POTENTIAL

4.12.3.1 Hazardous Materials

The proposed projects at ESN are not anticipated to result in the generation, storage, or release of hazardous materials, environmental contamination, or other regulated substances nor cause violations of applicable regulations pertaining to these materials. This conclusion is based on the information made available through the environmental records search, which implies that all outstanding hazardous

materials infractions have been remediated or are in the process of remediation, and that no entity on airport property is currently listed on any active National Priorities List (NPL).

In the event that unforeseen issues arise with hazardous materials that are associated with the proposed projects (i.e. spills or discovery of previously unknown contaminants), compliance with RCRA, CERCLA and other pertinent regulations will be ensured. The Project Sponsor shall also act in accordance with published guidance by the FAA in dealing with such infractions, as described in Advisory Circular 150/5320-15 – *Management of Airport Industrial Wastes*, FAA Order 1050.10B – *Prevention, Control and Abatement of Environmental Pollution at FAA Facilities,* as well as other pertinent guidance.

4.12.3.2 Solid Waste

Once implemented, operation of the proposed project improvements at ESN may increase the overall amount of solid waste generated at the facility over the No Build Alternative. However, it is not anticipated that the increase in the amount of solid waste generated shall produce an undue burden on existing Municipal Solid Waste (MSW) management, treatment or incineration facilities.

Construction wastes associated with the proposed projects are expected to be typical of those normally generated by land clearing, earthwork, and paving projects. These wastes may include, but not be limited to, demolition waste such as concrete; site clearing debris such as trees and vegetation; and, wastes generated by construction workers. Again, the amount of waste generated as a part of the proposed projects is not anticipated to be excessive of the reasonable capacities of local management facilities. Construction waste not diverted or recycled would be handled in accordance with applicable state and local requirements and disposed of in local permitted facilities. Moreover, the Sponsor shall also act in accordance with FAA AC 150/5320-15, Order 1050.10B, mentioned above, and any other relevant guidance to help mitigate solid waste impacts of the proposed projects, should the need arise.

4.13 CONSTRUCTION IMPACTS

The summary of construction impacts has been provided in accordance with FAA Order 1050.1E. For either of the Build Alternatives, mitigation measures would be implemented to reduce or avoid potentially significant impacts from construction, which would reduce the impacts below their thresholds of significance. However, there would be unavoidable temporary construction impacts on air quality, equipment noise, and water quality. The No Build Alternative includes no construction activities and would, therefore, result in no construction impacts.

AIR QUALITY: Fugitive dust emissions from construction activities and equipment would occur with the implementation of any of the Build Alternatives. However, contractors would exercise required fugitive dust control measures to reduce dust during the construction phases. As referred to in **Section 4.5**, an air quality emission inventory for the construction period of the proposed actions indicated that the construction-related VOC and NO_x emissions would be well below the *de minimis* thresholds during each year of construction.

EQUIPMENT NOISE: Noise from equipment and related activities on the site would be regulated through development of a construction noise specification to minimize exposure outside of the construction area.

WATER QUALITY: All construction-related water quality impacts from implementation of any of the proposed projects would be temporary and indirect, and would result from the removal of vegetation and grading activities and the operation of earth-moving equipment. These temporary and indirect water quality impacts would likely result from soil erosion/sedimentation and the introduction of pollutants from construction machinery. Potential temporary water degradation due to erosion and sedimentation would be mitigated through the utilization of appropriate BMPs and containment devices, such as silt fences. Appropriate erosion and sediment control plans will be prepared prior to construction for review and approval by Talbot County.

4.14 CUMULATIVE IMPACTS

Cumulative impacts are defined by the CEQ in 40 CFR 1508.7 as "impacts on the environment which result from the incremental impacts of the action when added to the other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." The CEQ regulations also state that the cumulative impacts addressed should not be limited to those from actual proposals, but must be impacts from actions being contemplated or that are reasonably foreseeable. The CEQ regulations further require that NEPA environmental analyses analyze connected, cumulative, and similar actions in the same document. This requirement prohibits segmentation of the project into smaller components to avoid required environmental analysis.

CEQ suggest analyzing only those resources that are incrementally affected by the proposed action and other actions within the same geographic area and time period.

The geographic area of concern for the cumulative impacts analysis is typically defined by the context of the proposed actions and its alternatives. The geographic limits for this cumulative impact analysis have been identified as the Miler River, Upper Choptank, and Lower Choptank sub-basins (see **Exhibit 4.14-1**). This boundary was determined to be appropriate for use in the cumulative analysis because it conservatively defines the potential geographical area and resources potentially affected by the proposed projects addressed in this EA.

The cumulative impacts associated with the proposed projects and other improvement projects located within the immediate vicinity of ESN were assessed from 2000 and 2024. The beginning year was established as the time of the most recent major projects within the identified sub-basins. The future-year time frame was established according to the extent of the future year noise analysis.

To identify and describe past, present, and reasonably foreseeable actions, CEQ suggests the use of "best available information." Therefore, the planning departments of both the Town of Easton and Talbot County were consulted. In addition, the *Talbot County Comprehensive Plan* (February 2005) and the

Draft Town of Easton Comprehensive Plan (2009) were reviewed. For purposes of describing the past, present, and reasonably foreseeable actions, the projects will be discussed in terms of Airport-related and non-Airport related projects.

4.14.1 AIRPORT RELATED PROJECTS

Previous planning efforts at ESN identified the need for a range of airside and landside improvements. The most sizable improvement at ESN was the construction of the Southwest Apron in 2006. Since that time, the ATCT, a fuel truck parking pad, and a corporate hangar have been constructed at the Airport. At present, the existing South Apron is being rehabilitated, and its southern and eastern portions are being expanded. In addition, at present, the removal of approximately 13 acres of trees that penetrate existing 14 CFR Part 77 surfaces are proposed for removal by fall 2010. The expansion of the South Apron and the removal of obstructions were determined to have the most significant impact on resources similar to those impacted by the proposed projects.

The current approved ALP (2009) proposes a range of needed improvement projects for Phase 1 (0 to 5 years), Phase II (6 to 10 years), Phase III (11 to 20 years), and Ultimate Development (beyond 20 years). The Phase I projects are addressed herein. The proposed projects within the reasonably foreseeable future (Phase II) include the construction of the remaining portion of the South Apron and a fuel truck parking pad.

4.14.2 NON-AIRPORT RELATED PROJECTS

The Town of Easton and Talbot County's planning departments have both been contacted to determine planned non-Airport related actions that are reasonably foreseeable within the geographic area defined for this analysis. Responses are pending. Therefore, the potential impacts below only address Airport-related impacts.

4.14.3 POTENTIAL IMPACTS

Only Airport-related past projects that are to occur within the reasonably foreseeable future can be quantitatively assessed, as specific impact data for these projects are available. Therefore, the potential cumulative impacts of the proposed projects in conjunction with other past, present, and future planned projects in the analysis study area cannot be fully assessed quantitatively, as specific impact data for all non-Airport related projects is either not available or are not yet developed. In addition, the impacts discussed below are limited to those resource categories under which some degree of effect was identified for the proposed action, since those projects would not contribute cumulatively to the other resource categories.

Development plans for these non-Airport actions will need to be reviewed, and all required environmental will need to be issued by MDNR and MDE, as appropriate, before they can be constructed. Therefore, the projects are not anticipated to contribute to a cumulatively significant impact to environmental resources

identified in **Section 4** of this EA, as they will also be required to provide an acceptable level of impact mitigation.

4.14.3.1 Social and Induced Socioeconomic Impacts

Adverse impacts resulting from the proposed projects as part of this EA or with other proposed projects located within the immediate vicinity of the Airport in terms of population, employment, and local revenues/expenditures are not anticipated. The proposed projects at ESN would generate temporary increases in local employment related to construction activities and the proposed projects could stimulate secondary economic effects through increased aviation related employment opportunities as the Airport continues to improve its facilities.

The proposed projects in this EA would result in the relocation of three residences and one business. All relocations would be in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970*, as amended. Other non-Airport projects involving Federal assistance will be required to similarly conform to the Uniform Act requirements.

4.14.3.2 Water Quality

As stated in **Section 4.6**, each project component was evaluated for water quality and quantity impacts and mitigation measures were addressed. A Comprehensive Stormwater Management Plan for the Airport is currently being prepared. This Plan will identity the additional stormwater management facilities that will be needed to implement the proposed projects at ESN in Phases II and III. Stormwater runoff will be managed by stormwater management facilities to be developed during planning and design of each proposed project.

The potential water quality effects of all projects identified in the cumulative scenario either have been, are, or will be subject to numerous review, approval, and permitting processes mandated under a regulatory framework established by a range of Federal, State, and local resource agencies. Each project must undergo individual review for compliance with this framework to assure that it does not contribute to the overall physical and chemical degradation of area receiving waters. As such, the potential for adverse cumulative effects is minimal since each proposed project is required to provide their own mitigation measures, as required, to assure compliance.

4.14.3.3 Wetland Resources

As stated in **Section 4.9**, the proposed projects assessed in this EA would impact 19.81 acres of wetlands. A JPA will be submitted to the MDE for the proposed projects. Appropriate mitigation measures will be implemented. No projects within Phase II and Phase III of ESN improvements would impact wetland resources.

Potential wetland impacts associated with other non-Airport related projects are dealt with by both Federal and State regulatory agencies on a case-by-case basis. Each proposed project needs to present

information, which quantifies potential wetland impacts, and proposed mitigation measures which are subject to agency review and approval to ensure that the overall function and values of the wetlands are maintained consistent with the national "no net loss" policy. As a result, cumulative wetland impacts should not be significant, should any wetlands be impacted by these projects.

4.14.3.4 Fish, Wildlife, and Plants

Maryland Forest Conservation Act

The FCA of 1991 requires that prior to the approval of any public or private subdivision, project plan, grading permit, or sediment control permit on a unit of land 40,000 square feet or greater, applicants must submit a FSD and FCP to the local reviewing authority, or if no local program has been established, to the Maryland Department of Natural Resources. The Town of Easton is the local reviewing authority for FCA compliance.

As discussed in **Section 4.10**, there are numerous projects within the Five-Year CIP that would disturb more than 40,000 square feet of land and would require approval of a grading or sediment control permit. These projects include: the extension of the runway and its associated projects (parallel taxiway, MALSR), east apron and hangar facilities, Southwest Apron hangars, and Airport service road. Coordination with the Town of Easton has indicated that the removal of obstructions that are penetrations to 14 CFR Part 77 surfaces are exempt from the FCA. According to the general FCP that was submitted to the Town in April 2008, forest conservation requirements for all future projects will be included as addendums to the general FCP. In addition, the general FCP established the means of providing afforestation for the Airport would be to pay into the Town's Forest Conservation Account. The current fee is $0.10 per square foot of afforestation required.

Other development projects are subject to review by resource agencies charged with assuring that projects are in compliance with applicable Federal, State, and local regulations, including the FCA. Thus, the cumulative effects of these other development projects would be offset by mitigation requirements of the FCA.

Rare, Threatened, and Endangered Species

As discussed in **Section 4.10**, approximately 32.4 acres of DFS habitat would be impacted by the proposed projects included in this EA. No projects in Phases II and III would impact DFS habitat. Coordination is ongoing with the FWS regarding this proposed impact and mitigation requirements. It is anticipated that the mitigation ratio would be 3:1 for impacts to DFS habitat.

As with impacts to wetland resources, other development projects are subject to review by resource agencies charged with assuring that projects are in compliance with applicable regulations, including the Endangered Species Act (ESA). Thus, the cumulative effect of these other development projects would be offset by mitigation requirements of the ESA.